

**COMPLETION REPORT  
FOR IMPLEMENTATION OF REMOVAL ACTION WORKPLAN (RAW)  
PARCEL O-6  
HITACHI GLOBAL STORAGE TECHNOLOGIES, INC.  
5600 COTTLE ROAD  
SAN JOSE, CALIFORNIA**

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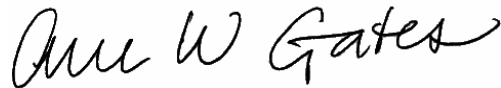
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I certify that the information contained in or accompanying this submittal is true, accurate, and complete. As to those portions of this submittal for which I cannot personally verify the accuracy, I certify that this submittal and all the attachments were prepared at my direction in accordance with procedures designed to assure that qualified personnel properly gathered and evaluated the information submitted.



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## EXECUTIVE SUMMARY

### *Introduction*

Hitachi Global Storage Technologies, Inc. (Hitachi GST) owns and operates a facility on approximately 332 acres that designs, develops, and manufactures computer storage devices, including hard disk drives, read/write heads, and disk storage media (the “Site”). The Site is located at 5600 Cottle Road in San Jose, Santa Clara County, California (Figure 1). The Hitachi GST Site is zoned for industrial use and is covered under a Resource Conservation and Recovery Act (RCRA) Part B Permit. Hitachi GST is proposing to transfer an approximately 11-acre parcel located in the northeastern corner of the Site to the City of San Jose (“Parcel O-6”). Parcel O-6 is planned to be developed into a City Police Substation. The remaining approximately 320 acres of the industrial Hitachi GST Site surround Parcel O-6 to the west, southwest, and south. The properties surrounding the rest of Parcel O-6 are mixed residential, commercial and agricultural.

### *Background*

The Site was owned and operated by the Storage Technology Division of International Business Machines (IBM) from 1955 through 2002. On or about January 1, 2003, Hitachi GST, a new company formed as a result of a strategic combination of IBM and Hitachi’s storage technology businesses, bought the Site. Parcel O-6 consisted of tree orchards and small farm-related buildings and residences from at least 1939 until the early 1980s. In approximately 1982, IBM developed Building 050 and its associated parking areas, including the parking areas on Parcel O-6. At this time, the roads surrounding Parcel O-6 were also developed. By 1985, it appears that all of the farm-related buildings and residences on Parcel O-6 had been demolished.

### *Environmental Investigation*

As part of the potential real estate transaction involving Parcel O-6 between Hitachi GST and the City of San Jose, an environmental investigation was conducted at Parcel O-6 in September through December 2004. The primary objective of the investigation was to determine if use of Parcel O-6 as tree orchards and asphalt parking lots had adversely impacted Parcel O-6 to an extent that might pose a threat to public health or the environment. As detailed in the Site Investigation Report for Parcel O-6 (ENVIRON 2004b), soil samples located across Parcel O-6 were analyzed for organochlorine pesticides (OCPs), metals, and polynuclear aromatics (PNAs). In addition, the road base fill material beneath parking areas was analyzed for asbestos to evaluate the presence of naturally-occurring asbestos (NOA).

### *Investigation Results*

Results of the Parcel O-6 environmental investigation indicated that arsenic was detected in soil above Site background concentrations in certain orchard areas located on the eastern side of Parcel

O-6. In addition, NOA was detected in the aggregate fill material beneath parking areas located in the southwestern portion of Parcel O-6. No other chemicals were identified as chemicals of concern (COCs) on Parcel O-6. Based on the results of the Parcel O-6 investigation, it was recommended that a removal action be performed to address elevated concentrations of arsenic in soils in certain orchard areas and NOA in road base fill material beneath certain parking lot areas.

#### *Removal Action Workplan*

The Removal Action Workplan (RAW) was prepared to identify, evaluate, and recommend remediation alternatives for the arsenic-impacted soil and the NOA-impacted fill material at Parcel O-6. The primary objective of the RAW was to ensure the protection of human health and the environment. The removal action objectives (RAOs) for Parcel O-6 were:

- Ensure the mean concentration of arsenic in soil at Parcel O-6 is not above a background concentration of 8 milligrams per kilogram (mg/kg), and the maximum arsenic concentration is less than 12 mg/kg; and
- Minimize exposure of Site occupants to parking lot road base material with NOA above 0.25%.

Removal action alternatives were evaluated based on their effectiveness, implementability, and cost. The recommended alternative was excavation and off-Site disposal of impacted materials.

#### *Removal Action Implementation*

After obtaining the appropriate permits and approvals, removal action activities were implemented on Parcel O-6 between July 5, 2005 and August 22, 2005. Site restoration activities were completed on September 6, 2005. All work was conducted in accordance with the Corrective Action Consent Agreement, Docket HWCA: P2-04/05-002. Excavation was conducted in the orchard to remove arsenic-impacted soil and in a portion of the parking lot to remove NOA-impacted road base fill material. A total of 7,218 tons of arsenic-impacted soil were excavated from Parcel O-6 and transported off-Site to the Altamont Landfill in Livermore, California. A total of 4,963 tons of NOA-impacted material were excavated from Parcel O-6 and transported to Altamont Landfill.

Confirmation samples were collected from the arsenic-impacted soil excavation areas to confirm that the RAO for arsenic was met. The overall average arsenic concentration in shallow soil was 8 mg/kg with a maximum arsenic concentration of 12 mg/kg. Because all of the NOA-impacted road base fill material was removed down to native soil and to pre-established boundaries, no confirmation samples were collected from the NOA excavation area.

Once excavation activities were completed, restoration of Parcel O-6 occurred. The orchard area was regraded to ensure that no areas of excavation were deeper than three feet below the

surrounding ground surface. In addition, the orchard and parking lot excavations were hydroseeded on September 2 and 6, 2005 to minimize fugitive dust from wind erosion.

## **1.0 INTRODUCTION**

On behalf of Hitachi Global Storage Technologies, Inc. (Hitachi GST), ENVIRON International Corporation (ENVIRON) has prepared this Completion Report for activities related to implementation of the Removal Action Workplan (RAW) (ENVIRON 2005) for Parcel O-6 of the Hitachi GST property located at 5600 Cottle Road in San Jose, Santa Clara County, California (“the Site”). Parcel O-6 covers approximately 11 acres and is located in the northeastern corner of the approximately 332-acre Hitachi GST Site. Removal actions were required to address the presence of arsenic-impacted soil and naturally occurring asbestos (NOA) impacted road base fill material present on Parcel O-6. Hitachi GST is proposing to transfer Parcel O-6 to the City of San Jose. In turn, the City of San Jose plans to redevelop Parcel O-6 as a City Police Substation.

Because the entire Hitachi GST Site is covered under a Resource Conservation and Recovery Act (RCRA) Part B Permit, the RAW activities were conducted under the direction of the Department of Toxic Substances Control (DTSC). The DTSC is providing oversight for transferring a portion of the permitted Site to a new owner. In addition, the DTSC is responsible for determining that the corrective action on Parcel O-6 is complete. The City of San Jose has prepared an Initial Study and a Mitigated Negative Declaration for the proposed development project and Site clean-up to comply with the requirements of the California Environmental Quality Act (CEQA).

This Completion Report documents the work conducted at Parcel O-6 to meet the removal action objectives (RAOs) that were established in the RAW. The report contains information about Site background, previous Site investigations, and the preparation, excavation and Site restoration activities.



## **2.0 SITE CHARACTERIZATION**

### **2.1 SITE DESCRIPTION AND BACKGROUND**

Hitachi GST owns and operates a facility on approximately 332 acres that designs, develops, and manufactures computer storage devices, including hard disk drives, read/write heads, and disk storage media. As previously mentioned, the Site is located at 5600 Cottle Road in San Jose, Santa Clara County, California (Figure 1). The Hitachi GST Site is zoned for industrial use and is covered under a RCRA Part B Permit.

Hitachi GST is proposing to move its Headquarter operations to a different location in San Jose (3403 Yerba Buena Road), and consolidate manufacturing, research and development (R&D), and support functions on a portion of the existing Hitachi GST Site. In turn, some of the current buildings at the Site would be demolished, and a portion of the land would be sold, rezoned, and redeveloped into a mixed residential, commercial, and recreational open space area. This proposed redevelopment area is divided into six parcels (Parcels O-1 through O-6), as shown in Figure 2. Hitachi GST plans to continue industrial operations (developing and manufacturing of computer storage devices) on the remainder of the Site, termed the Core Area. The Core Area, which is divided into three parcels (Parcels C-1 through C-3), contains all of the current manufacturing, chemical storage, waste storage, and wastewater treatment buildings/areas on the Site. All non-Headquarters activities currently located on the Redevelopment Area will be moved to the Core Area under this redevelopment plan.

The RAW activities focused on Parcel O-6, which consists of approximately 11-acres and is located in the northeastern corner of the Site (see Figure 2). Hitachi GST is proposing to transfer Parcel O-6 to the City of San Jose. In turn, the City of San Jose plans to redevelop Parcel O-6 into a City Police Substation.

#### **2.1.1 Site History**

Prior to 1955, the Site was agricultural land, primarily tree orchards, with associated residences. In 1955, International Business Machines (IBM) purchased the Site. The Site was owned and operated by the Storage Technology Division of IBM from 1955 through 2002. IBM designed, developed, and manufactured computer storage devices, including hard disk drives, read/write heads, and disk storage media at the Site. On or about January 1, 2003, Hitachi GST, a new company formed as a result of a strategic combination of IBM and Hitachi's storage technology businesses, bought the Site.

Parcel O-6 consisted of tree orchards and small farm-related buildings and residences from at least 1939 until the early 1980s. In approximately 1982, IBM developed Building 050 and its associated parking areas, including the parking areas on Parcel O-6. At this time the roads surrounding Parcel O-6 (Tucson Way, Brooklyn Avenue, Austin Drive, and Manassas Road) were developed. By 1985, it appears that all of the farm-related buildings and residences on Parcel O-6 had been demolished. Prior to the implementation of the RAW activities, no major developments, demolitions, or changes in operations (besides installation of monitoring and recharge wells) had occurred on Parcel O-6 since approximately 1985.

### **2.1.2 Surrounding Areas**

The Site, and therefore Parcel O-6, is located in a mixed industrial, commercial and residential area near the intersections of Monterey Highway, Blossom Hill Road, and U.S. Highway 101, approximately seven miles southeast of downtown San Jose. Parcel O-6 is located in the northeastern corner of the Site and is bounded by private paved roads Tucson Way to the north, Brooklyn Avenue to the west, and Austin Drive to the south, and an agricultural area to the east (see Figure 3). Manassas Road runs through the eastern portion of Parcel O-6.

Further details regarding surrounding properties are provided in the Final RAW (ENVIRON 2005) for Parcel O-6.

## **2.2 SOURCE, NATURE AND EXTENT OF IMPACTS**

As part of the on-going groundwater remediation program at the Hitachi GST Site, a few groundwater monitoring wells are located on Parcel O-6. According to documentation reviewed by ENVIRON, Parcel O-6 is located upgradient from the remainder of the Site and was not impacted by subsurface releases located in other areas of the Site. Based on groundwater monitoring data, elevated concentrations of contaminants have not been detected in monitoring wells on Parcel O-6 historically or currently. IBM personnel reported that the monitoring wells on Parcel O-6 are currently being monitored to obtain background concentrations of constituents.

A Phase I Environmental Site Assessment (ESA) was conducted for Parcel O-6 in May 2004 (ENVIRON 2004a). Based on ENVIRON's visual observation of Parcel O-6, review of sources of historical information, a review of regulatory agency databases, and ENVIRON's professional judgment, no "recognized environmental conditions" (RECs) were identified on Parcel O-6. At the time of the Phase I ESA, Hitachi GST personnel reported no known or potential areas of contamination at Parcel O-6 and no previous subsurface soil investigations or remedial activities conducted on Parcel O-6. ENVIRON identified the possible presence of NOA in fill materials

brought onto Parcel O-6 and the possible application of pesticides on Parcel O-6 orchard trees as potential concerns as part of any future redevelopment or construction activities.

A Site Investigation (ENVIRON 2004b) was conducted at Parcel O-6 in September 2004. The primary objective of the investigation was to determine if use of Parcel O-6 as tree orchards and asphalt parking lots had adversely impacted Parcel O-6 to an extent that might pose a threat to public health or the environment. Based on identified areas of potential concern, the surface soil in the orchard was sampled for persistent agricultural chemicals, including organochlorine pesticides (OCPs) and metals. The fill material beneath the parking areas was sampled for NOA and polynuclear aromatics (PNAs). Results of the Site Investigation identified two contaminants of concerns (COCs) present on Parcel O-6: 1) arsenic in the soil of the eastern orchard area; and 2) NOA in the aggregate fill material located beneath certain parking areas on Parcel O-6.

In May 2005, ENVIRON prepared a RAW (ENVIRON 2005) to identify, evaluate, and recommend alternatives for remediation of the impacted materials identified on Parcel O-6 during the Site Investigation. The recommended alternative identified in the RAW was excavation and off-Site disposal of impacted materials. This alternative was selected based upon its ability to meet the RAOs and practicability. The selected alternative is protective of human health and removes concentrations of arsenic and NOA above the RAOs.

The RAW was approved (with conditions) by DTSC on May 16, 2005 and removal activities began at Parcel O-6 on July 5, 2005.

### **3.0 REMOVAL ACTION IMPLEMENTATION ACTIVITIES**

Removal action activities were implemented by DECON Environmental Services, Inc. (DECON) of Hayward, California under the oversight of ENVIRON beginning July 5, 2005. All work was conducted in accordance with the Corrective Action Consent Agreement, Docket HWCA: P2-04/05-002. As described in the RAW, a Health and Safety Plan (HASP) was prepared for the Site and all work on Parcel O-6 was conducted under the guidelines of the HASP. In addition, a field logbook was kept during the project documenting the daily Site activities, important project milestones, and when, where, how and from whom any vital project information was obtained.

The following sections include detailed information about the preparation, excavation and removal, and Site restoration activities conducted on Parcel O-6. Photographs taken during the project are presented in Appendix A in electronic format.

#### **3.1 PREPARATION**

In accordance with local, state, and federal regulations, and in accordance with the RAW, various Site preparation activities were conducted prior to the start of excavation at Parcel O-6. These activities are described in greater detail below.

##### **3.1.1 Permits and Prior Approvals**

As outlined in the RAW, an Asbestos Dust Mitigation Plan, was submitted to the Bay Area Air Quality Management District (BAAQMD) on March 18, 2005. The plan was approved on April 8, 2005. A copy of the BAAQMD approval letter is provided in Appendix B.

The City of San Jose requires that a tree removal permit be obtained for the removal of trees of any size for commercial or industrial properties. Submittal the permit materials occurred in May 2005. A tree removal permit was obtained on June 15, 2005 from the City of San Jose and granted approval to remove the 68 non-ordinance sized trees (i.e., trees with a diameter less than 18 inches) present in the orchard areas. A copy of the City of San Jose permit is provided in Appendix B.

Because the removal actions disturbed more than one acre of soil, Hitachi GST was also required to obtain coverage from the State Water Resources Control Board (SWRCB) under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 99-08-DWQ). A Notice of Intent (NOI) was filed with the SWRCB in May 2005 and coverage under the General Permit was granted on May 24, 2005. A

copy of the notice of approval from the SWRCB is provided in Appendix B. The associated Storm Water Pollution Prevention Plan (SWPP) was prepared on June 23, 2005.

A City of San Jose Grading Permit was also required to ensure that the Site restoration and grading activities would allow the Site to drain properly, not impact the adjacent properties, and not create erosion problems. A Grading and Erosion Control Plan was submitted to the City of San Jose Public Works Department in May 2005 and verbal approval of the plan was granted on July 11, 2005. Written approval of the plan was received July 25, 2005. A copy of the written approval letter is provided in Appendix B.

### **3.1.2 DTSC Conditional Approval**

Conditional approval of the RAW was granted by DTSC on May 16, 2005 provided the following additional project controls were implemented:

- A pre-construction survey for burrowing owls and nesting birds conducted by a qualified ornithologist;
- Consultation with an arborist to protect the trees that will remain on Parcel O-6;
- Protection of cultural resources; and
- Submittal of two copies of a Traffic Control Plan to the California Department of Transportation (DOT).

On May 23, 2005, EDAW Inc. (EDAW) of San Francisco, California conducted the pre-construction burrowing owl and nesting bird surveys of Parcel O-6. A follow-up nesting bird survey was conducted on June 22, 2005. The burrowing owl survey was conducted in accordance with the California Department of Fish and Game recommended Western Burrowing Owl Survey Protocol (The California Burrowing Owl Consortium 1993). The results of the survey indicated that no suitable habitat for Burrowing Owls was observed on Parcel O-6. The nesting bird survey identified three potential nest sites on Parcel O-6 and recommended that construction activities be delayed until the completion of nesting (approximately late June). The follow-up nesting survey conducted on June 22, 2005 concluded that the previously identified nests were no longer in use, however, a newly active hummingbird nest was identified in Tree 53. EDAW gave approval to begin construction activities, provided that Tree 53 was not disturbed until after July 13<sup>th</sup> or after a follow-up survey was conducted. EDAW visited the site again on July 5, 2005 and determined the hummingbird nest was no longer active. EDAW granted oral approval to proceed with construction activities on July 5,

2005. Copies of EDAW's memoranda summarizing the findings and conclusions of their surveys are provided in Appendix C.

Michael Baefsky, a certified arborist of Baefsky and Associates, Inc. was retained to prune and consult on the protection of the trees that were to remain on Parcel O-6. On July 6, 2005, he marked the pruning level for the redwood trees located in the orchard. During the course of the removal activities, Mr. Baefsky also consulted on the excavation of arsenic-impacted soil surrounding an ordinance-sized ash tree located in the east orchard. The details of the excavation around the ash tree are provided below.

Cultural resources were not encountered during the removal activities. Thus, no archaeologist was contacted.

A Transportation Plan was submitted as Appendix C to the RAW in May 2005. Two copies of this plan were submitted to the California DOT.

### **3.1.3 Utility Clearance**

To mark known buried utilities, Underground Services Alert (USA) was notified of the planned activities prior to mobilization on Parcel O-6. In addition, a private utility locator, Subdynamic Locating Services of San Jose, California, was retained to conduct a utility survey prior to initiating excavation work to identify underground utilities in the proposed work areas. The utility survey and marking was completed on July 5, 2005.

### **3.1.4 Security Measures**

Several precautionary measures were put in place to discourage trespassers and unauthorized personnel from entering the work areas and to provide a safe work environment. In coordination with Hitachi GST Site Security, privacy fencing with wind-screen material was installed prior to conducting excavation activities to ensure that all work areas would be secure. The fencing completely enclosed the work area and was locked during non-work hours. Notices were posted to direct visitors to the Site Manager. Visitors were not permitted to enter the Site without first receiving Site-specific health and safety training from the Site Health and Safety Officer (SHSO). The SHSO was in charge of ensuring compliance with the HASP, and of providing a point of contact for employees working at the Site who may have had questions regarding the HASP.

### **3.1.5 Storm Water Controls**

Pre-excavation Site activities began on July 5, 2005. In accordance with the SWPPP, the storm water drains were covered with plastic sheeting to prevent sediment or excavation runoff from entering the drains. Plastic sheeting remained over the drains throughout all excavation activities. No other alternative methods of sediment or runoff control measures were implemented during the removal activities.

### **3.1.6 Tree Removal and Vegetation Stripping**

Trees with a trunk diameter less than 18-inches located in the vicinity of the arsenic-impacted soil in the orchard area were removed to the base of the trunk by DECON from July 5 through July 7, 2005. The trees were chipped on-Site and approximately 12 cubic yards of chippings were recycled as mulch in other orchard areas on the Hitachi GST Site. Following the tree removal, DECON stripped the tree trunks, shallow tree roots, vegetation, and loose soils in preparation for the orchard excavation. The stripped vegetation, tree roots, and soil were placed in four stockpiles of approximately 100 cubic yards or less each. Each stockpile was analyzed for arsenic to ensure proper disposal. A grab sample was taken in four separate areas of each stockpile. The grab samples were submitted to Severn Trent Laboratories (STL). The grab samples from each stockpile were composited in the laboratory and analyzed for arsenic. Results of the four stockpile composite samples indicated the material could be disposed as non-hazardous waste at the Altamont Landfill. Results of the stockpile sampling are summarized in Table 1. (Laboratory analytical reports are provided in Appendix D in electronic format).

Following the first round of sampling in the orchard areas, it became apparent that the four ordinance-sized redwood trees located in the southwest section of the orchard would need to be removed in order to meet the Parcel O-6 cleanup goals. After receiving approval from the City of San Jose to remove the trees, Davey Tree mobilized on Site on July 25, 2005. Davey Tree cut the four redwood trees to the base of the trunk. The redwood tree debris was chipped and approximately twelve cubic yards of redwood tree chippings were transported to Becks in Mariposa, California for recycling. The redwood tree stumps and roots were transported off-Site for disposal with the arsenic-impacted soil as described in Section 3.2.1.

## **3.2 EXCAVATION AND SAMPLING**

The sampling and excavation activities on Parcel O-6 began following tree removal and vegetation stripping. Excavation was conducted in the orchard to remove arsenic-impacted soil and in a portion of the parking lot to remove NOA-impacted road base fill material. A total of 12,181 tons of material were transported off-Site to the Altamont Landfill in Livermore, California. No

hazardous waste was shipped off-Site. The estimated extents of excavation areas are shown in Figure 4. Properly equipped workers, trained according to 29 CFR 1910.120 completed the fieldwork. Air monitoring was conducted during all soil removal and truck loading activities. Excavation areas were controlled to avoid excessive dust generation utilizing frequent wetting and perimeter wind-screened fencing.

### **3.2.1 Removal of Arsenic-Impacted Soils in the Orchard**

In accordance with the RAW, soil samples from the orchard areas were collected in a grid-fashion following tree removal and vegetation stripping. The first round of sampling in the orchard began on July 8, 2005. Samples were collected at grid nodes, approximately every 25 feet. Sampling equipment was decontaminated after each sample was collected using Liquinox solution and deionized water. The sampling results were used to delineate the excavation areas within the orchard, based upon the cleanup goals for Parcel O-6, i.e., no arsenic concentrations above 12 mg/kg and a Parcel O-6 average arsenic concentration of 8 mg/kg. The first round of excavation in the orchard began July 14, 2005. With the exception of the first lift of the section of orchard west of Manassas Road (“the west orchard”), excavation occurred in one-foot depth increments with samples collected from the grid nodes in the excavated areas to determine if the cleanup goals had been achieved or if further excavation was required. Prior to excavation, the surface of the west orchard was elevated approximately three to four feet above the surrounding curb. The mounded soil was likely from the leveling of the adjacent areas during the mid-1980s construction of the parking lots and roads on Parcel O-6. After the first round of sampling indicated the soil in the west orchard contained elevated levels of arsenic, the soil was removed from the west orchard in one lift of approximately three to four feet to bring the surface to curb level. Once this area was brought to curb level, excavation was conducted in one-foot lifts. The one-foot lift excavation of each node continued until the sample results collected at the base of excavation indicated the cleanup goal for arsenic had been met.

Several trees existed in the orchard with trunk diameters greater than 18-inches (i.e., ordinance-sized trees). These trees included four redwood trees in the west orchard, and one redwood and one ash tree in the area of the orchard east of Manassas Road (“the east orchard”). As mentioned above, the four redwood trees located in the west orchard were removed after realizing the soil around and under these trees was likely impacted with arsenic. In the east orchard, sampling results indicated that soils surrounding the redwood tree did not need to be excavated in order to meet the arsenic cleanup goal. Soil surrounding the ash tree, however, would need to be removed.



In order to minimize the damage to the root system of the ash tree, excavation within the ash tree protection zone was done under the supervision of the arborist utilizing a combination of hand digging and a mini-excavator. Hand digging was employed within a five-foot radius of the tree trunk base. Roots were flagged and the mini-excavator was used to excavate the remaining soil. If a root was damaged during digging, it was flagged and later repaired by sawing the root above the location of damage in accordance with the arborist's recommendations. While waiting for sample results, the roots were kept moist by daily watering. After two iterations of excavation conducted over three days (July 21, August 5, and August 15, 2005), the sample results indicated that the cleanup goals had been achieved under the ash tree and the exposed roots were covered with clean soil from nearby the tree.

Figure 5 shows the confirmation sample results collected from each node at the base of excavation of the orchard. Excavation and sampling of the orchard soil was complete on August 19, 2005. The Parcel O-6 average arsenic concentration was 8 mg/kg. A summary of the data and Parcel O-6 average are provided in Table 2. Table 3 summarizes the results of the intermediary soil samples collected during excavation. (Laboratory analytical reports are provided in Appendix D in electronic format).

Excavation depth in the orchard areas varied from node to node and ranged from no excavation to approximately seven feet below the original ground surface. Figure 6 shows the corresponding approximate depths of excavation at each node relative to the original ground surface. A few deeper areas (approximately two to three feet below ground surface (bgs)) in both the east and west orchards had been previously identified during Site characterization activities as "hot spots". In the west orchard, the "hot spots" were located in the mounded soil and were removed when the mound was excavated as one lift following the first round of sampling. Excavation of the nodes surrounding the two "hot spots" identified in the east orchard were conducted to depths of two to four feet below curb level (nodes G9, G10, F10, and F11) and from two to three feet below curb level (nodes J9, H10, J10, and J11).

Soil excavated from the orchard was temporarily stockpiled on Parcel O-6 and transported off-Site for disposal at the Altamont Landfill under Straight Bills of Lading in accordance with the Transportation Plan submitted with the RAW. Copies of the Bills of Lading are provided in Appendix E in electronic format. Truck loading and soil transportation of the arsenic-impacted soil began July 27, 2005 and was completed on August 19, 2005.

During the sampling and excavation procedures, a few sample results of certain nodes indicated arsenic was detected at concentrations greater than 50 mg/kg. Soil from these nodes was

excavated and stockpiled separately from the rest of the arsenic-impacted soil. A grab sample was taken in four separate areas of each segregated stockpile. The grab samples from each stockpile were composited in the laboratory prior to analysis. The composite samples of the segregated stockpiles were analyzed for total arsenic and Soluble Threshold Limit Concentration (STLC) to determine if the soil was hazardous. None of the segregated stockpiles were deemed hazardous and the segregated stockpiles were transported to Altamont Landfill with the rest of the arsenic-impacted soil. Results of the composite stockpile samples are summarized in Table 4. Over the course of several weeks, a total of 312 truckloads of arsenic-impacted soil were transported to the Altamont landfill for disposal. A total of 7,218 tons of arsenic-impacted soil were transported off-Site. No material was transported to the Kettleman Hills Landfill.

### **3.2.2 Data Quality**

To evaluate the precision and accuracy of analytical data, field duplicates and laboratory quality control samples were analyzed periodically for this project. Field duplicates were collected once for every ten samples collected in the field. Laboratory method blank samples and laboratory control samples were analyzed with every analytical batch and at a minimum of one for every twenty samples analyzed. A matrix spike and matrix-spike duplicate analysis were performed once for the matrix type. The results of the field duplicates are summarized in Tables 2 and 3. Relative percent differences (RPDs) for the field duplicate samples ranged from 0% to 105.9%. Table 5 summarizes the RPD calculations. Tables 6, 7, and 8 provide the results of the method blank, laboratory control sample, and matrix spike sample results, respectively.

The results of the laboratory quality control indicate the overall quality of the data was good. There were no detections in any of the method blank samples. The percent recoveries and RPDs of all laboratory control sample and laboratory control sample duplicates were within the acceptable ranges (percent recovery acceptable range is 80-120%, acceptable RPD is 20%). The percent recovery and RPD of the matrix spike and matrix spike duplicate samples were also within the acceptable range (percent recovery acceptable range is 75-125%, acceptable RPD is 20%). No data quality flags were required in the analytical reports.

### **3.2.3 Removal of NOA-Impacted Road Base Fill Material in Parking Lot**

On Friday July 8, 2005, DECON began grinding the asphalt in the parking lot to facilitate removal of the NOA-impacted road base fill material. Grinding of the asphalt was completed on Tuesday July 12, 2005. Approximately 1600 tons of ground asphalt were direct-loaded into

trucks and transported to Reed & Graham, Inc. of San Jose, California for recycling on July 8 and 12, 2005. A total of 89 truckloads of ground asphalt were transported off-Site.

Excavation of the NOA road base began on Wednesday July 13, 2005 and occurred concurrently with the excavation of the orchard areas. In general, excavation of the NOA material occurred while sample results collected in the orchard were pending. The NOA material is grayish green in color and excavation extents were determined in the field based upon visual observation. The NOA excavation depth extended to the brown native soil and varied from 3 to 12 inches in thickness. The approximate horizontal extents of excavation are shown on Figure 3 and were based on sampling that had previously been performed during the Site investigation. Excavated NOA material was temporarily stockpiled on Parcel O-6 separately from the arsenic-impacted soil and transported to Altamont Landfill under Straight Bills of Lading in accordance with the Transportation Plan submitted with the RAW. Copies of the Bills of Lading are provided in Appendix E in electronic format. Truck loading and transportation of the NOA material occurred from August 2, 2005 until August 22, 2005. A total of 203 truckloads of NOA-impacted material were transported to Altamont Landfill. A total of 4,963 tons of NOA-impacted material were transported off-Site. As indicated in the RAW, no confirmation samples were collected in the parking lot area since the extent of the NOA-impacted material had already been delineated during prior sampling.

### **3.2.4 Air Monitoring**

Air monitoring was conducted during the NOA and arsenic-impacted soil removal activities including excavation and truck loading for disposal. Air monitoring was conducted by Applied Measurement Science of Fair Oaks, California from July 7, 2005 to August 22, 2005 and consisted of several particulate monitoring stations setup to monitor fence line dust levels, and real-time dust monitors to monitor the level of dust exposure to the workers. Results of the air monitoring are presented in Appendix F.

Dust monitoring results were used to guide DECON in applying water for dust control. Excavation areas were controlled to avoid excessive dust generation utilizing frequent wetting and perimeter wind-screened fencing. As described in greater detail in Appendix D, the recommended action levels for PM<sub>10</sub> were exceeded several times during the removal action. The majority of these exceedences occurred at the east monitor. This is most likely due to the monitor being located directly adjacent to the area of soil removal on those particular days. When made aware of the exceedences, watering efforts were increased to minimize the dust being generated.

### **3.3 RESTORATION**

Upon confirmation that the cleanup goal for arsenic at Parcel O-6 had been achieved, minor grading of the orchard areas occurred to smooth out the excavation and ensure that no area was greater than three feet deep below the surrounding grade. Re-grading and restoration activities were conducted in accordance with the approved Grading and Erosion Control Plan and were completed on September 6, 2005. After re-grading was completed on August 23, 2005, most of the excavation in the orchard areas was below the curb level. In a few areas where soil remained at or above curb level, a silt fence was installed at the perimeter of the excavation to prevent erosion. In addition, sediment traps were installed on storm drain catch basins downstream of open excavation areas in accordance with the approved Erosion Control Plan. In addition, all excavated areas in the orchard and parking lot were hydroseeded on September 2 and 6, 2005. Fencing or another means of Site control will remain in place to limit unauthorized access to Parcel O-6 until ownership of the property is transferred to the City.

## 4.0 REFERENCES

California Department of Fish and Game. 1993. *The California Burrowing Owl Consortium*. April.

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